

**MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY  
OPERATING PERMIT TECHNICAL REVIEW DOCUMENT**

**Permitting and Compliance Division  
1520 E. Sixth Avenue  
P.O. Box 200901  
Helena, Montana 59620-0901**

**Northern Border Pipeline Company  
Compressor Station No. 1  
NE¼ of the SE¼, of Section 12, Township 33 North, Range 38 East  
Valley County, Montana**

The following table summarizes the air quality programs testing, monitoring, and reporting requirements applicable to this facility.

Facility Compliance Requirements	Yes	No	Comments
Source Tests Required	X		Method 22
Ambient Monitoring Required		X	
COMS Required		X	
CEMS Required		X	
Schedule of Compliance Required		X	
Annual Compliance Certification and Semiannual Reporting Required	X		As applicable
Monthly Reporting Required		X	
Quarterly Reporting Required		X	
<b>Applicable Air Quality Programs</b>			
ARM Subchapter 7 Preconstruction Permitting			2979-01
New Source Performance Standards (NSPS)	X		Subpart GG
National Emission Standards for Hazardous Air Pollutants (NESHAPS)		X	
Maximum Achievable Control Technology (MACT)		X	
Major New Source Review (NSR)		X	
Prevention of Significant Deterioration (PSD)		X	
Risk Management Plan Required (RMP)		X	
Acid Rain Title IV		X	
State Implementation Plan (SIP)	X		General SIP

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## I. GENERAL INFORMATION

### A. Purpose

This document establishes the basis for the decisions made regarding the applicable requirements, monitoring plan, and compliance status of emissions units affected by the operating permit proposed for this facility. The document is intended for reference during review of the proposed permit by the EPA and the public. It is also intended to provide background information not included in the operating permit and to document issues that may become important during modifications or renewals of the permit. Conclusions in this document are based on information provided in the original application submitted by NBPL on February 21, 1997.

### B. Facility Location

NBPL owns and operates the Compressor Station No. 1. This facility is located at NE $\frac{1}{4}$  of SE $\frac{1}{4}$  of Section 12, Township 33 North, Range 38 East, in Valley County, Montana. This site is approximately 28 miles north of Glasgow Montana. Compressor Station No.1 is located near Buggy Creek, in gently rolling terrain, about 42.5 miles northeast of Forsman Reservoir. From the intersection of Highway 2 and 24 travel north on Highway 24 to mile marker #34. Turn left (west) on the county road and travel 11 miles. Then turn southwest, the site is on the left approximately 5 miles. The total property area covered by this facility is 40 acres. Valley County is designated as an Unclassifiable/Attainment area for National Ambient Air Quality Standards (NAAQS) for all criteria pollutants.

### C. Facility Background Information

On February 21, 1997, NBPL submitted a complete permit application to construct and operate Compressor Station No. 1 in Valley County, Montana. This facility would consist of one 39,335-hp Cooper-Rolls, 6562-DLE Coberra; one (1) 245-kW emergency backup generator engine; one 1.706 MMBtu/hr hydronic boiler; and one 15-kW emergency backup generator. The application stated the estimated start date as 8/97 and the estimated completion date as 11/98. A preconstruction permit was issued for this facility on 4/30/97. The application also indicated that the site will be unmanned, with zero permanent new employees as a result of the proposed project. This facility has the potential to emit greater than 100 tons per year of NO<sub>x</sub> and is therefore required to obtain an operating permit. This facility is a NSPS Subpart GG affected source because the Cooper-Rolls Coberra meets the definition of a stationary gas turbine and was manufactured after October 3, 1997. The Cooper-Rolls Coberra will have an internal dry low NO<sub>x</sub> combustion as its control device, which constitutes BACT for this facility.

**Permit #OP2979-00** established the basis for the decisions made regarding the applicable requirements, monitoring plan, and compliance status of emissions units affected by the operating permit for this facility. The document was intended for reference during review of the permit by the EPA and the public. It was also intended to provide background information not included in the operating permit and to document issues that may become important during modifications or renewals of the operating permit. Conclusions in this document were based on information provided in the original operating permit application submitted by Northern Border Pipeline Company (NBPL) and received by the Department of Environmental Quality (Department) on February 11, 1997.

On February 15, 2001, NBPL submitted a request for the Department to revise the permitted custom fuel monitoring schedule and equipment for Compressor Station 1 Located in Valley County, MT. An H<sub>2</sub>S and Total Sulfur Analyzer replaced the chromatograph. The custom fuel

schedule was structured to allow a representative sample to be recorded every 2 weeks with an option of extending the sampling schedule to once every 6 months upon approval by the Department. **Permit #OP2979-01** replaced Permit #OP2979-00.

On October 9, 2001, the Department received a request from NBPL for a modification to Permit #OP2979-01. The modification was an administrative amendment, which changed the responsible official for the facility. **Permit #OP2979-02** replaced Permit #OP2979-01.

On February 3, 2003, the Department received a request from NBPL for an administrative Amendment to Permit #OP2979-02. The administrative amendment changed the responsible official and the corporate office address for the facility. **Permit #OP2979-03** replaced Permit #OP2979-02.

#### **D. Current Permit Action**

On February 3, 2003, the Department received a request from NBPL for an administrative amendment to Permit #OP2979-03. The responsible officials name was changed in error on Permit #OP2974-03. Permit #OP2974-04 changes the responsible official from Jay Muschenheim back to Randy Rice and changes the facility contact from Ruth Jensen to Jay Muschenheim. **Permit #OP2979-04** replaces Permit #OP2979-03.

#### **E. Taking and Damaging Analysis**

HB 311, the Montana Private Property Assessment Act, requires analysis of every proposed state agency administrative rule, policy, permit condition or permit denial, pertaining to an environmental matter, to determine whether the state action constitutes a taking or damaging of private real property that requires compensation under the Montana or U.S. Constitution. As part of issuing an operating permit, the Department is required to complete a Taking and Damaging Checklist. As required by 2-10-101 through 105, MCA, the Department has conducted a private property taking and damaging assessment and has determined there are no taking or damaging implications. The checklist was completed on April 6, 1998.

#### **F. Compliance Designation**

The Department has not inspected this site for air quality purposes. However, all the material reviewed in the Department's files indicates that the facility is in compliance with all the applicable requirements. All source tests shall be conducted in accordance with the Montana Source Protocol and Procedures Manual.

## **II. SUMMARY OF EMISSION UNITS**

### **A. Facility Process Description**

The NBPL Compressor Station No. 1 is a natural gas pipeline transmission station with one Cooper-Rolls Coberra, natural gas fired turbine. A hot water boiler provides the heat to the various station facilities.

The Standard Industrial Classification (SIC) for this facility is a Natural Gas Transmission@ which has an SIC Code of 4922.

### **B. Emission Units and Pollution Control Device Identification**

The NBPL Compressor Station No. 1 application identified one 39,335-hp Cooper-Rolls Coberra 6562 Compressor Turbine, one 245-kW emergency backup generator engine, one 1.706 MMBtu/hr hydronic boiler, and one 15-kW emergency backup generator.

The Cooper-Rolls Coberra will contain a dry low NO<sub>x</sub> combustion system as part of the turbine design, this design and operating practice constitutes BACT for this facility. No pollution control devices exist on the two emergency backup generator engines or the hydronic boiler.

### **C. Categorically Insignificant Sources/Activities**

The Administrative Rules of Montana (ARM) 17.8.120 (22)(a) defines an insignificant emission unit as one that emits less than 5 tons per year of any regulated pollutant, has the potential to emit less than 500 pounds per year of lead or any Hazardous Air Pollutant (HAP), and is not regulated by an applicable requirement other than a generally applicable requirement.

This facility has a 1.706 MMBtu/hr Hydronic Boiler, used for heating buildings and fuel preheat as needed. This boiler meets the definition of insignificant emission unit.

### **III. PERMIT TERMS**

#### **A. Emission Limits and Standards**

Emission limits for the 39,335-hp Cooper-Rolls Coberra Compressor Turbine were established by a BACT determination under the authority of ARM 17.8.715. The Cooper Rolls natural gas turbine shall be operated properly by maintaining the dry low NO<sub>x</sub> combustion system that is part of the turbine design. Minimum stack height for the Cooper Rolls natural gas turbine shall be 55 feet above ground level. The compressor turbine has an emission limit of 40 ppmvd and 50.0 lb/hr for NO<sub>x</sub> and 3.00 lb/hr for VOC. Sulfur content in the fuel shall not exceed 0.08% by weight and sulfur dioxide content in the fuel shall not exceed 0.015% by volume at 15% oxygen on a dry basis. The two emergency generator engines are limited to 500 hours of operation per year in order to comply with the EPA definition of an emergency back up generator. NBPL shall utilize pipelining quality natural gas in the Cooper Rolls turbine, the 245-kW emergency backup generator and the 1.706 MMBtu/hr hydronic boiler. NBPL shall operate all equipment to provide the maximum air pollution control for which it was designed.

NBPL shall comply with all applicable standards, limitations, and the reporting, recordkeeping, and notification requirements contained in 40 CFR Part 60, Subpart GG, unless otherwise specified (ARM 17.8.340 and 40 CFR Part 60).

The emission units at this facility are not subject to any current MACT or NESHAP standards. This facility is not subject to PSD regulations.

#### **B. Monitoring Requirements**

40 CFR 70.6(a)(3) calls for an operating permit to contain periodic monitoring or testing sufficient to yield reliable data that is representative of the source's compliance with the permit. These monitoring requirements shall assure that use of terms, test methods, units, averaging periods, and other statistical conventions consistent with the applicable requirements. These requirements do not warrant the permit to impose the same level of rigor for all emissions units. Furthermore, it does not require extensive testing or monitoring for emission units under normal operating conditions that do not have significant potential to violate emission limitations or other requirements. When compliance is not threatened by a lack of a regular monitoring program and when periodic testing or monitoring is not imposed by an applicable requirement, then "no monitoring" will meet section 70.6(a)(3). Therefore, this permit does not include monitoring for insignificant emission units.

This permit includes periodic monitoring or recordkeeping for each applicable requirement. The information obtained from the monitoring and recordkeeping will be used by the permittee to periodically certify compliance with the emission limits and standards. However, the Department may request additional testing to determine compliance with the emission limits and standards.

The semi-annual testing with the portable analyzer will provide NBPL and the Department with data to assure compliance with the NO<sub>x</sub> emission limits in this permit. The gas chromatography with flame ionization detection will provide data to be used in determining the sulfur content of the fuel. Since the fuel consumed by the emission units is pipeline quality natural gas, the potential to exceed the opacity and particulate in fuel conditions in this permit is negligible. Therefore, the recordkeeping provisions of this permit should demonstrate compliance with these conditions. Likewise, the threat of exceeding the fugitive particulate limitation is unlikely; therefore, documenting any reasonable precautions taken to control emissions of airborne particulate matter will satisfy the requirements in this permit.

**C. Test Methods and Procedures**

NBPL shall conduct an emissions test with a portable analyzer in order to determine the NO<sub>x</sub> emissions from the turbine once every 6 months. The portable analyzer shall be capable of achieving performance specifications equivalent to EPA traditional methods defined in 40 CFR 60, Appendix A or shall be capable of meeting the requirements of EPA Conditional Test Method 022 for the "Determination of Nitric Oxide, Nitrogen Dioxide, and NO<sub>x</sub> Emissions from Stationary Combustion Sources by Electrochemical Analyzer." NBPL shall demonstrate compliance with the NO<sub>x</sub> limitations by converting the emission test results (ppm) to a mass emission rate (lb/hr) using EPA Method 19 in 40 CFR 60, Appendix A. NBPL may use another testing procedure as approved in advance by the Department (ARM 17.8.105 and ARM 17.8.106).

**D. Recordkeeping Requirements**

The recordkeeping provisions shall be sufficient to meet the provisions of the monitoring requirements and shall include, as necessary, the installation, use and maintenance of the monitoring equipment or methods as well as the following information: the date the analyses were performed, the place and time of the sampling, the company or entity performing the sampling, the analytical techniques or methods used, the results of such analysis, and the operating conditions at the time of the analysis. Retention of the records of all required monitoring data and support information shall be for a period of at least 5-years from the date of measurement. Support information includes: all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the operating permit.

**E. Reporting Requirements**

The permittee is required to submit to the Department reports of any required monitoring at least every 6 months and to annually certify compliance with the applicable requirements contained in the permit. All deviations from permit requirements must be clearly identified in these reports. All reports must be certified by a responsible official. The permittee is also required to promptly report any deviations from the permit requirements due to upset conditions and the probable cause of the upset condition along with any corrective actions or preventive measures taken.

#### IV. NON-APPLICABLE REQUIREMENTS ANALYSIS

Section IV of the operating permit "Non-applicable Requirements" contains the requirements that the Department determined were non-applicable. The following table summarizes the requirements that NBPL identified as non-applicable and contains the reasons that the Department did not include these requirements as non-applicable in the permit.

##### Requirements Not Identified in the Operating Permit

Applicable Requirement		Reason
Sub-Chapter 1 General Provisions		
ARM 17.8.101	Definitions	These rules consist of either a statement of purpose, applicability statement, regulatory definitions or a statement of incorporation by reference. These types of rules do not have specific requirements associated with them.
ARM 17.8.102	Incorporation by Reference - Publication Dates and Availability of Referenced Documents	
ARM 17.8.103	Incorporation by Reference	
Sub-Chapter 2 Ambient Air Quality		
ARM 17.8.201	Definitions	These rules consist of either a statement of purpose, applicability statement, regulatory definitions or a statement of incorporation by reference. These types of rules do not have specific requirements associated with them.
ARM 17.8.202	Incorporation by Reference	
ARM 17.8.205	Enforceability	These rules are always applicable to a major source and may contain specific requirements for compliance. However, these rules have been excluded as an applicable requirement (ARM 17.8.1202).
ARM 17.8.206	Methods and Data	
ARM 17.8.210	Ambient Air Quality Standard for Sulfur Dioxide	
ARM 17.8.211	Ambient Air Quality Standard for Nitrogen Dioxide	
ARM 17.8.212	Ambient Air Quality Standard for Carbon Monoxide	
ARM 17.8.213	Ambient Air Quality Standard for Ozone	
ARM 17.8.214	Ambient Air Quality Standard for Hydrogen Sulfide	
ARM 17.8.220	Ambient Air Quality Standard for Settled Particulate Matter	
ARM 17.8.221	Ambient Air Quality Standard for Visibility	
ARM 17.8.222	Ambient Air Quality Standard for Lead	
ARM 17.8.223	Ambient Air Quality Standard for PM-10	
ARM 17.8.230	Fluoride in Forage	
Sub-Chapter 3 Emission Standards		
ARM 17.8.326	Prohibited Materials for Wood or Coal Residential Stoves	This regulation may not be applicable to the source at this time, however, it may become applicable during the life of the permit.
ARM 17.8.330	Definitions	This rule consists of either a statement of purpose, applicability statement, regulatory definition or a statement of incorporation by



Applicable Requirement	Reason
	reference. These types of rules do not have specific requirements associated with them.
Sub-Chapter 4 Stack Heights	
ARM 17.8.401 Definitions	This rule consists of either a statement of purpose, applicability statement, regulatory definition or a statement of incorporation by reference. These types of rules do not have specific requirements associated with them.
ARM 17.8.402 Requirements ARM 17.8.403 Exemptions	These are procedural rules that have specific requirements that may become relevant to a major source during the permit span.
Sub-Chapter 5 Air Quality Permit Application, Operation and Open Burning Fees	
ARM 17.8.504 Air Quality Permit Application Fees ARM 17.8.514 Air Quality Open Burning Fees ARM 17.8.515 Air Quality Open Burning Fees for Conditional, Emergency, Christmas Tree Waste, and Commercial Film Production Open Burning Permits	These are procedural rules that have specific requirements that may become relevant to a major source during the permit span
Sub-Chapter 6 Open Burning	
ARM 17.8.606 Minor Open Burning Requirements ARM 17.8.611 Emergency Open Burning Permits ARM 17.8.612 Conditional Air Quality Open Burning Permits	The following regulations may not be applicable to the source at this time; however, these regulations may become applicable during the life of the permit.
Sub-Chapter 7 Permit, Construction and Operation of Air Contaminant Sources	
ARM 17.8.740 <i>et seq.</i> Permit, construction and operation of air contaminant sources	The following regulations may not be applicable to the source at this time; however, these regulations may become applicable during the life of the permit.
Sub-Chapter 8 Prevention of Significant Deterioration	
ARM 17.8.825 Sources Impacting Federal Class I Areas Additional Requirements ARM 17.8.826 Public Participation	These rules do not have specific requirements for major sources because they are requirements for EPA or state and local authorities. Furthermore, these rules can be used as authority to impose specific requirements on a major source.
ARM 17.8.804 Ambient Air Increments	The following regulations may not be applicable to the source at this time; however, these regulations may become applicable during the life of the permit
Sub-Chapter 9 Permit Requirements for Major Stationary Sources or Major Modifications Located Within Nonattainment Areas	
ARM 17.8.901 Definitions ARM 17.8.902 Incorporation by Reference	These rules consist of either a statement of purpose, applicability statement, regulatory definitions or a statement of incorporation by

Applicable Requirement	Reason
	reference. These types of rules do not have specific requirements associated with them.
ARM 17.8.904 When Air Quality Preconstruction Permit Required ARM 17.8.905 Additional Conditions of Air Quality Preconstruction Permit ARM 17.8.906 Baseline for Determining Credit for Emissions and Air Quality Offsets	These regulations are state regulations, which may not be applicable to the source at this time, however, these regulations may become applicable during the life of the permit.
Sub-Chapter 10 Preconstruction Permit Requirements for Major Stationary Sources or Major Modifications Located Within Attainment or Unclassified Areas	
ARM 17.8.1001 Definitions ARM 17.8.1002 Incorporation by Reference	These rules consist of either a statement of purpose, applicability statement, regulatory definitions or a statement of incorporation by reference. These types of rules do not have specific requirements associated with them.
ARM 17.8.1004 When Air Quality Preconstruction Permit Required ARM 17.8.1005 Additional Conditions of Air Quality Preconstruction Permit ARM 17.8.1006 Review of Specified Sources for Air Quality Impact ARM 17.8.1007 Baseline for Determining Credit for Emissions and Air Quality Offsets	These regulations may not be applicable to the source at this time, however, these regulations may become applicable during the life of the permit.
Sub-Chapter 11 Visibility Impact Assessment	
ARM 17.8.1101 Definitions ARM 17.8.1103 Applicability --Visibility Requirements	These rules consist of either a statement of purpose, applicability statement, regulatory definitions or a statement of incorporation by reference. These types of rules do not have specific requirements associated with them.
ARM 17.8.1108 Notification of Permit Application ARM 17.8.1109 Adverse Impact and Federal Land Management	These rules do not have specific requirements for major sources because they are requirements for EPA or state and local authorities. Furthermore, these rules can be used as authority to impose specific requirements on a major source.
Federal Requirements	
40 CFR 50 National Primary and Secondary Ambient Air Quality Standards 40 CFR 51 Requirements for Preparation, Adoption, and Submittal of Implementation Plans 40 CFR 58 Ambient Air Quality Surveillance	These rules do not have specific requirements for major sources because they are requirements for EPA or state and local authorities. Furthermore, these rules can be used as authority to impose specific requirements on a major source
40 CFR 52 Approval and Promulgation of Implementation Plans 40 CFR 62 Approval and Promulgation of State Plans for Designated Facilities and Pollutants 40 CFR 70 and 71 State Operating Permit Programs and	These rules contain requirements for regulatory authorities and not major sources, these rules can be used to impose specific requirements on a major source.

Applicable Requirement	Reason
EPA Regulations on Federal Operating Permit Programs	
40 CFR 60.11 Compliance with Standards and Maintenance Requirements 40 CFR 60.14 Modification 40 CFR 60.15 Reconstruction	These regulations may not be applicable to the source at this time, however, these regulations may become applicable during the life of the permit.
40 CFR 61, Subpart M National Emissions Standards for Hazardous Air Pollutants - Asbestos	This is a federal regulation that has specific procedural requirements that may become relevant to the major source during the permit term.
40 CFR 63, Subpart A General Provisions	These federal regulations consist of an applicability statement. These regulations may not be applicable to the source at this time, however, these regulations may become applicable during the life of the permit.

## **V. FUTURE PERMIT CONSIDERATIONS**

### **A. MACT/NESHAP Standards**

National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities (40 CFR Part 63, Subpart HH) and National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities (40 CFR Part 63, Subpart HHH) was promulgated June 17, 1999. As of January 6, 2002, the Department has not made an applicability determination.

### **B. NSPS Standards**

As of the issuance date of Permit #OP2979-04, this facility is subject to 40 CFR Part 60, Subpart GG, Standards of Performance for Stationary Gas Turbines.

### **C. Risk Management Plan**

As of the issuance date of Permit #OP2979-04, this facility does not have any substance listed in 40 CFR 68.115 or 40 CFR 68.130, which exceeds the minimum threshold quantities. Also, this facility is subject to DOT regulations for accidental release prevention; consequently, this facility is not required to submit a Risk Management Plan.